

KEVICC Key Stage 3 Curriculum Subject: Mathematics		Key Vocabulary and notation.																																																															
Summer Half-Term 1 Lines and Angles																																																																	
Term: Year 7 Summer Term – Block One		Topic: Construction, measurement and notation																																																															
<p>What is the essential knowledge from this unit? What do students need to remember and understand?</p> <p>Students will build on their key stage 2 skills using rulers, protractors and other measuring equipment to construct and measure increasingly complex diagrams using correct mathematical notation. This will include three letter notations for angles, the use of hatch marks to indicate equality and the use of arrows to indicate parallel lines. Pie charts will be studied here to gain further practice at drawing and measuring angles.</p> <p>National curriculum content covered:</p> <ul style="list-style-type: none"> • Use language and properties precisely to analyse 2-D shapes. • Begin to reason deductively in geometry including using geometrical constructions. • Draw and measure line segments and angles in geometric figures, including interpreting scale drawings. • Describe, sketch and draw using conventional terms and notations: points, lines, parallel lines, perpendicular lines, right-angles, regular polygons, and other polygons that are reflectively and rotationally symmetric. • Use the standard conventions for labelling sides and angles. • Construct and interpret pie charts for categorical, ungrouped and grouped numerical data. • Identify and construct triangles <p>We know that breaking the curriculum down into small manageable steps should help students to understand concepts better. As a result, for each block of content in the scheme of learning we have provided the following 'small step' breakdown for this unit as follows:</p> <p>Lesson One - Understand and use letter and labelling conventions including those for geometric figures.</p> <p>Lesson Two - Draw and measure line segments including geometric figures.</p> <p>Lesson Three - Understand angles as a measure of turn.</p> <p>Lesson Four - Classify angles.</p> <p>Lesson Five - Measure angles up to 180°.</p> <p>Lesson Six - Draw angles up to 180°.</p> <p>Lesson Seven - Draw and measure angles between 180° and 360°.</p> <p>Lesson Eight - Identify perpendicular and parallel lines.</p> <p>Lesson Nine - Recognise types of triangle.</p> <p>Lesson Ten - Recognise types of quadrilateral.</p> <p>Lesson Eleven - Identify polygons up to a decagon.</p> <p>Lesson Twelve - Construct triangles using SSS.</p> <p>Lesson Thirteen - Construct triangles using SSS, SAS and ASA.</p> <p>Lesson Fourteen - Construct more complex polygons.</p> <p>Lesson Fifteen - Interpret simple pie charts using proportion</p> <p>Lesson Sixteen – Interpret pie charts using a protractor</p> <p>Lesson Seventeen – Draw pie charts</p> <p>Interleaving/Extension of previous work</p> <ul style="list-style-type: none"> • Revisit simplifying and perimeter in e.g. polygons. • Form and solve equations in geometric settings. • Revisit mental and formal methods of addition and subtraction, including with decimals. 		<table border="0"> <tr><td>Line</td><td>Equilateral</td></tr> <tr><td>Line Segment</td><td>Isosceles</td></tr> <tr><td>Geometric Figure</td><td>Scalene</td></tr> <tr><td>Notation</td><td>Length</td></tr> <tr><td>Polygon</td><td>Square</td></tr> <tr><td>Length</td><td>Rectangle</td></tr> <tr><td>Height</td><td>Kite</td></tr> <tr><td>Width</td><td>Rhombus</td></tr> <tr><td>Figure</td><td>Parallelogram</td></tr> <tr><td>Degrees</td><td>Trapezium</td></tr> <tr><td>Angle</td><td>Polygon</td></tr> <tr><td>Rotation</td><td>Edges</td></tr> <tr><td>Quarter turn</td><td>Vertices</td></tr> <tr><td>Half turn</td><td>Vertex</td></tr> <tr><td>Three Quarter turn</td><td>Equal</td></tr> <tr><td>Full turn</td><td>Triangle</td></tr> <tr><td>Acute</td><td>Decagon</td></tr> <tr><td>Obtuse</td><td>Pair of</td></tr> <tr><td>Right-angle</td><td>Compasses</td></tr> <tr><td>Reflex</td><td>Side</td></tr> <tr><td>Interior</td><td>Edge</td></tr> <tr><td>Exterior</td><td>Point</td></tr> <tr><td>Protractor</td><td>Diagonals</td></tr> <tr><td>Sum</td><td>Compound</td></tr> <tr><td>Measure</td><td>Regular</td></tr> <tr><td>Construct</td><td>Proportion</td></tr> <tr><td>Parallel</td><td>Frequency</td></tr> <tr><td>Perpendicular</td><td>Total</td></tr> <tr><td>Intersect</td><td>Fraction</td></tr> <tr><td></td><td>Comparison</td></tr> <tr><td></td><td>Sector</td></tr> </table> <p>Mathematical questioning should be designed to unpick the structure of the maths and deepen the student's understanding. When students talk about mathematical concepts, they should develop the vital mathematical language that helps them explain their ideas fully.</p> <p>Students are expected and encouraged to use terminology during all discussions, verbal feedback and in written content.</p>		Line	Equilateral	Line Segment	Isosceles	Geometric Figure	Scalene	Notation	Length	Polygon	Square	Length	Rectangle	Height	Kite	Width	Rhombus	Figure	Parallelogram	Degrees	Trapezium	Angle	Polygon	Rotation	Edges	Quarter turn	Vertices	Half turn	Vertex	Three Quarter turn	Equal	Full turn	Triangle	Acute	Decagon	Obtuse	Pair of	Right-angle	Compasses	Reflex	Side	Interior	Edge	Exterior	Point	Protractor	Diagonals	Sum	Compound	Measure	Regular	Construct	Proportion	Parallel	Frequency	Perpendicular	Total	Intersect	Fraction		Comparison		Sector
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<p>What prior learning supports understanding of this content?</p> <ul style="list-style-type: none"> • Draw 2-D shapes using given dimensions and angles. • Find unknown angles in any triangles, quadrilaterals, and regular polygons. • Recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles. • Interpret and construct pie charts and line graphs and use these to solve problems. 		<p>How does this content link to future learning?</p> <ul style="list-style-type: none"> • Calculate and use angles at a point, angles on a straight line and vertically opposite angles. • Calculate missing angles in triangles and quadrilaterals. • Understand and use parallel line rules. • Understand and use the sum of angles in any polygon. • Derive simple proofs using angles rules. 																																																															
<p>Reading: <i>Where in the unit are students supported to read complex academic text?</i></p> <ul style="list-style-type: none"> • Reading and understanding mathematical questions and problems' – teacher input. • Decoding complex examination questions - explain what they are asking the student to do' – teacher input. • Following instructions to solve problems - break down the tasks – teacher input. • Recognising terminology, numbers, and symbols. • Recognising patterns and relationships in mathematics. 		<p>Writing: <i>Independent writing tasks and how they are structured</i></p> <ul style="list-style-type: none"> • Using the correct subject specific terminology for numbers and symbols – examination papers, class books. • Responding to questions that ask for an explanation or a reason – examination papers, class books. • Self-evaluation, reviewing, reflecting and analysis of own work –, class books, personalised learning checklists and analysis. • Creating notes that can be used later for revision purposes - class books, revision cards, mind maps etc. 																																																															

Key assessments:

How will students review the information learned?

End of block assessments.

End of block assessments provide a quick progress check at the end of each block of learning to make sure students have understood the content covered.

A Core paper – it is envisaged that all students will take this paper, to provide a direct comparison with the performance of the rest of the cohort. All topics from each term will be covered, and the use of a calculator is expected.

End of term assessments.

A Foundation paper – students who are working below national expectations will have the opportunity to show their understanding of the material with more straightforward questions. Non calculator paper.

A Higher paper – students who are working at or above national expectations will have the opportunity to tackle more challenging questions on the same material, plus the extra objectives indicated as "Higher" in our scheme of learning. Non calculator paper.

How will feedback be seen?

Marked end of block and term assessments.

Personalised learning checklists for end of term assessments identifying strengths and areas of development.

Written teacher feedback and marking in compliance with faculty and College Marking Policies. Student responses to marking.

Students self-mark using purple pen. Verbal feedback given every lesson from teacher and peers as appropriate.

Teacher and student self-assessment of presentation of class books will be completed to ensure written work is of high standard and students are achieving their potential.